

SURGERY/PATHOLOGY

TESTICULAR BIOPSY IN THE EVALUATION OF MALE INFERTILITY IN MAIDUGURI NORTH-EASTERN NIGERIA.

*H.U.NA'AYA., **H.A NGGADA, *D. DOGO.

*DEPARTMENT OF SURGERY AND ** DEPARTMENT OF HISTOPATHOLOGY UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL, MAIDUGURI.

CORRESPONDENCE TO:

DR. H.U NA' AYA.

DEPARTMENT OF SURGERY,

UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL,

P.M.B. 1414, MAIDUGURI, BORNO STATE, NIGERIA.

ABSTRACT.

OBJECTIVE: To evaluate testicular biopsy in the management of male infertility in the university of Maiduguri Teaching Hospital.

METHOD: This study reviewed retrospectively testicular biopsy in the infertile males managed at University of Maiduguri Teaching Hospital between January 1991 and December 2000.

RESULT: Forty-six patients had testicular biopsy for infertility as part of their investigations.

Mean age at presentation was 33.8 years and mean duration of marriage before presentation was 5.9 years. Forty-one (80%) had primary infertility and 5 (11%) secondary infertility.

Twenty-eight (60.9%) had history suggestive of urethritis. Bacteriospermia was detected in 14 (30.4%). Thirty-three (71.4%) of the patients had azoospermia while 16 (34.8%) had severe tubular atrophy. Six (13.04%) of the patients with normal spermatogenesis but had bacteriospermia were able to achieve fertility after adequate antibiotic therapy.

CONCLUSION: Though infertility can be caused by many factors, infection appears to be among the major contributors to infertility in this environment.

KEY WORDS: Testicular biopsy, male infertility, north-eastern Nigeria.

INTRODUCTION.

Infertility is a source of great worries for many African couples and it is associated with misery, feeling of worthlessness, and a sense of loss, especially among men who believe that their names would be forgotten soon after death.(1-4) These fears had led to many panicking measures such as herbal medications and visiting spiritual homes. More often the female partner is blamed erroneously for the misfortune amongst infertile couples. (9-11) Testicular biopsy performed properly can be of considerable value in the evaluation of infertile males, both diagnostically and prognostically. (12-14)

We hereby present our experiences with testicular biopsies in the management of the infertile male in the environment.

PATIENTS AND METHODS.

All case notes of those who presented with infertility whether primary or secondary infertility and had testicular biopsy as part of their investigation between January 1991 and December 2000 were retrieved and analyzed.

Information such as age, tribe, occupation, main complaints, history of trauma to the testes, orchitis, urethritis with or without orchitis, sperm count, culture of the seminal fluid and histology of the testicular biopsy, eight patients were excluded for lack of adequate information. Forty-six case notes were found to contain adequate information for analyses. Findings are hereby presented.

RESULT.

The study shows that the mean age of patients visiting the hospital for infertility and whom testicular biopsy was done as part of their investigation is 33.8 years (range 22-52 years).

There was no tribal preponderance. Most of the patients were civil servants followed by traders/businessmen (Table 1).

Primary infertility constituted 41(89%) of cases while only 4(11%) had secondary infertility. Mean duration of infertility before presenting to the hospital was 5.9 years (range between 1-13 years). Those with secondary infertility had children ranging between 1 and 2.

There was positive history of purulent urethritis in 14(30.43%) of patients, 4 patients gave history of epididymo-orchitis without purulent urethritis while the remaining 10(21.74%) all had purulent urethritis with epididymo orchitis, 3 patients gave history of testicular trauma, and no history related to genitourinary system in the remaining 15(32.61%) patients (Table11).

Seminal fluid culture grew staphylococcus aureus in 14 patients (30.4%), while in 32 patients (69.6%) there was no bacterial growth. Thirty-three patients (71.4%) were azoospermic, 10(21.74%) were oligospermic count ranging between 1 and 20 x 10⁶ cells per mls

(Table11). Testicular biopsies show severe tubular atrophy in 16(34.8%) patients, maturation arrest in 9(19.6%) patients, normal spermatogenesis in 8(17.4%), and leydig cell hyperplasia in 2(4.3%) patients. The sperm counts of the eight (8) patients with normal spermatogenesis were; 6 patients with oligospermia (count of 1-10x10⁶ cells/ml) and 2 patients had azoospermia.

Six patients (13.04%) of those with normal spermatogenesis but had bacteriospermia were able to in pregnant their wives after treatment with antibiotics while the other 2(25%) could not despite adequate antibiotic treatment.

TABLE I: Occupational Distribution of cases with Infertility.

Occupation	No (%)
Civil Servants	19(41.3)
Traders/businessmen	13(28.3)
Farmers	4(8.7)
Military/paramilitary	3(6.5)
Students	3(6.5)
Mechanic, drives, electricians, bankers	4(8.7)
TOTAL	46(100)

TABLE 11: Distribution of possible aetiological factors in 46 patients with infertility.

History of genitourinary lesion	No (%)
Trauma	3(6.52)
Urethritis	14(30.43)
Orchitis	4(8.70)
Urethritis & orchitis	10(21.74)
Idiopathic	15(32.61)
TOTAL	46(100)

TABLE 111: Sperm counts for all patients analyzed for infertility.

Sperm count (x10 ⁶ cells/ml)	No.(%0
0	33(71.74)
1-10	7(15.22)
11-20	3(6.52)
Not specified	3(6.52)
TOTAL	46(100)

TABLE 1V: Histology of the testicular biopsy in the infertility patient.

Histology	No.(%)
Severe tubular atrophy	16(34.87)
Hypospermatogenesis	11(23.90)
Maturation arrest	9(19.67)
Normal spermatogenesis	8(17.79)
Leydig cell hyperplasia	2(4.3)
TOTAL	46(100.0)

DISCUSSION.

The value of testicular biopsy in infertile men looked at in this study. The study has shown that the mean age of patients presenting with infertility is 33.8 years (range 22-52 years). The factors responsible for this late presentation are that they first of all seek traditional medication for their infertility before seeking orthodox treatment. Also the women are first blamed for infertility in our environment before the males are considered, thus the females are usually investigated first before their male partners.

Mean duration before presentation was 5.9 years, which may not be unconnected with the factors mentioned above. The rate of primary infertility was 41 (89%), while secondary infertility was 5 (11%). This differs from what was reported by Nwasbuisi in Ilorin where 34.8% and 65.2% presented with primary and secondary infertility respectively⁽¹⁵⁾

Prevalence of azospermia was 33 (71.74%) and sub fertility was 13 (28.26%). Culture of the seminal fluid grew staphylococcus aureus in 14 (30.4%), which is higher than the 7% reported by Nwabuisi in Ilorin⁽¹⁵⁾. These may suggest that infection contribute significantly to male infertility in this environment.

Histology of the biopsies showed severe tubular atrophy in 16 (34.8%) and hypo spermatogenesis in 11 (23.9%) normal spermatogenesis 8 (17.4%). These results contrast with that of Thomas who found severe atrophy in 22.4% and normal spermatogenesis, 38.2%¹⁶. The sertoli cell syndrome described by del costro in 1947 as "absence of germinal epithelium without impairment of the sertoli or leydig cells" was seen in 2 (4.3%) in this study⁽¹²⁾. Six of the eight (8) patients with normal spermatogenesis, but who also had bacteriospermia achieved pregnancy after adequate antibiotic treatment. From this review, it appears that infection is a major contributor to infertility in this environment.

Testicular biopsy is of value in differentiating between those patients with primary testicular failure from those with tubular blockage. Though there is poor result with reconstructive surgery, particularly in blacks because of excessive fibrosis, they could still be helped through in-vitro fertilization where sperm may be aspirated for the procedure. Two of the eight patients with azoospermia in this study are likely to be due to tubal blockage as they failed to achieve pregnancy despite adequate antibiotic therapy and sperm count remains zero. Those who

cannot be help by antibiotic therapy or in-vitro fertilization can be advised to adopt a child.

Educating the public on the dangers of hiding or inadequate treatment of sexually transmitted diseases in chemist shops will go a long way in reducing infertility in males in this environment.

In conclusion therefore, testicular biopsy still has a role in evaluating and management of infertility.

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REFERENCES.

1. Ladipo A.O. The epidemiology of infertility Dokita 1987, 16, 1-5
2. Akande E.O. Problems of infertility in sub-Sahara Africa Dokita 1987, 16; 23-27
3. Anate M. The infertile couple problem role of family planning choices. Nigeria medical practitioner 1991, 21: 26-32.
4. Anate M. Akeredolu O. Attitude of male partners to infertility management in Ilorin. Nigeria medical practitioner 1994, 27(5)46-49
5. Chukwudebely W.O. Esege N. Megafu U. Etiological factors in infertility in Enugu. Nigeria Infertility 1979, 2: 183-200
6. Giwa-Osagie OR, Ogunyemi O. Emuveyan EE, Akinta O.A. Efidugical classification and socio-medical characteristics of infertility in 250 couple. Int. J. Fertil. 1984, 29: 104-108.
7. Chukudebely W.O. The role of the Nigerian male in infertility in Africa. Adedaro, BK (ed) Ibadan, Nigeria The Caxton press 1974: 85-87.
8. Ladipo A.O. Semen analysis in fertile and infertile Nigerian men. J. Nat. med. Ass. 1980, 72: 785-789.
9. Simmons F.A. Human infertility. New Engl. J. Med. 1968, 17: 210.
10. Ojo D.A. Male factor in infertile marriages in Nigeria. West Africa J. Med 1981; 1: 31.
11. Contric C. General consideration on male infertility: male infertility and sterility. In: proceedings of the second Symposium; 1974: 5. Academic press London.

12. Garduno A.Mehan, D.J. Testicular biopsy in patients with impaired fertility. *J.Urol.* 1970; 104:871.
13. Neinhart, E.MC Rac, C.U, Chisholm G.D. Testicular biopsy in evaluation of male in fertility. *Brit. Med. J.* 1973; 3: 577.
14. Wong, T.W.Strans, F.H, Wamer, N.E. Testicular biopsy in the study of male infertility testicular causes of infertility *Arch. Path* 1973; 95:151.
15. Nwabuisi, Onile, B.A. Male infertility among sexually transmitted diseases clinic Attendees in Ilorin, Nigeria. *J. Med.* 2001; 10:68-70.
16. Thomas, J.O. Histological pattern of testicular biopsies in Ibadan, Nigeria *East Afr. Med. J.* 1990; 67:578-584.